



A Publication of the 18th MEDCOM Preventive Services Directorate
"Preserving the Fighting Strength"

UPDATE

**Disease
Non-battle
Injury
in the Korean
Theater**

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INTRODUCTION

This month's focus is on reportable disease surveillance and latex allergies. Given the rapid turnover not only of our beneficiary population, but also our providers, a discussion of our surveillance efforts and the key role providers play in this scenario, is a timely topic.

Latex allergy is a newly-emerging occupational disease among susceptible healthcare workers who are or become sensitized. Because of the wide-range of applications for a substance such as latex, other members of the general public may also develop symptoms. A patient education brochure is included to help you spread the word educate the community.

As always, your thoughts on these subjects are welcome. Please contact the Update via email, at Laura.Pacha@kor.amedd.army.mil.

Surveillance 101

Medical surveillance, epidemiology and population health are, for the most part, topics given little attention in most medical, veterinary and dental schools today. The massive growth of knowledge concerning disease processes, treatment and other interventions, not to mention the field of genetics, demands the attention of students, professors and patients alike. Without lengthening an already long process, programs must budget their time, and population health topics are often pushed aside.

Yet disease reporting is a legal requirement, in both the civilian and military worlds. So when do practitioners learn about medical surveillance and disease reporting? The answer? Right here.

Public health surveillance, as defined by the Centers for Disease Control and Prevention (CDC), is "the ongoing systematic collection, analysis, and interpretation of health data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know. The final link in the surveillance chain is the application of these data to prevention and control."

Lots of big words. Bottom line, though: The systematic collection, analysis, and dissemination of health information is a **critical** aspect of public health. This relies absolutely upon provider participation in the reporting process.

Surveillance, then, is the problem-finding process. This is then linked to public health action, which is the problem-solving process. Providers are the key link in this chain. Without knowledge of the problems, programs and policies addressing their answers cannot be instituted.

DNBI UPDATE Staff

COL Terry Klein, Ph.D.

Director, 18th MEDCOM Preventive Services

COL Steven Richards, Ph.D.

Chief, Environmental Health and Industrial Hygiene

LTC Lee, Hee-Choon, M.D., M.P.H

Chief, Clinical Preventive Services

MAJ Angelene Hemingway, R.N., CHN

Chief, 18th MEDCOM Community Health Nursing

CPT Laura Pacha, M.D.

Preventive Medicine Officer
Editor, DNBI Update

MSG Edwin Huertas

NCOIC, 18th MEDCOM Preventive Services

Kang, Tae Kyun, D.V.M.

Epidemiologist

Helen Chang, M.D.

Chief, Occupational Health

Ms. Suh, OK

Health Promotion Educator

Views and opinions expressed are not necessarily those of the 18th MEDCOM or the Department of the Army.

The Nature of Infectious Disease Surveillance

Disease surveillance systems provide for the ongoing collection, analysis, and dissemination of data to prevent and control disease. Disease surveillance data are used by public health professionals, medical professionals, private industry, and interested members of the general public in numerous ways:

- to identify cases for investigation and follow-up
- to estimate the magnitude of a health problem and follow trends in its incidence and distribution
- to formulate and evaluate control and prevention measures
- to detect outbreaks or epidemics and generate appropriate interventions
- to monitor changes in infectious agents (e.g., antibiotic resistance, emerging infections)
- to facilitate epidemiologic and laboratory research
- to detect changes in health practice (e.g., impact of use of new diagnostic methods on case counts)
- to facilitate planning (e.g., allocation of program resources, policy development)

So Who Decides What's Reportable?

The Army Medical Surveillance Activity explains how the DoD reportable events list was built. Four criteria were utilized. First, the disease or condition must have a clear case definition and a single standard code in the International Classification of Diseases, 9th revision (ICD-9). Second, an intervention must be available and/or a public health response indicated. Third, a sufficient, timely source of information must not already exist. Fourth, the condition or event must represent an inherent, significant threat to the public's health (e.g., potential to affect large numbers of people, to be efficiently transmitted within a population, or to have severe/life threatening clinical manifestations) or represent a significant military operational threat (e.g., potential to disrupt military training, deployment, or operations) or be commonly reportable by state or federal laws, regulations, or guidelines. Vector-borne diseases, and food- or water-borne diseases are categories of disease that have great potential to effect large populations, and they carry clear public health responses to reduce their incidence.

Below is a list of the Triservice reportable conditions. Several diseases fit into more than one category.

Highly Contagious

Diphtheria
 Haemophilus influenza, invasive
 Influenza
 Legionellosis
 Measles
 Meningococcal disease
 Mumps
 Pertussis
 Plague
 Pneumococcal pneumonia
 Polio
 Rubella
 Strep, Grp A, invasive
 Toxic shock syndrome
 Tuberculosis
 Varicella

Sexually Transmitted

Chlamydia
 Gonorrhea
 Hepatitis B
 Hepatitis C
 Syphilis
 Urethritis

Potential for Serious Consequences

Rabies
 Tetanus
 Hantavirus disease
 Hemorrhagic fever
 Acute Rheumatic fever
 Lead poisoning
 Carbon monoxide poisoning
 Lead poisoning

Military Significance

Anthrax
 Biological warfare agent
 Botulism
 Carbon monoxide poisoning
 Chemical agent exposure
 Cold injury (frostbite, hypothermia or immersion)
 Heat exhaustion
 Heat stroke
 Plague
 Tularemia
 Smallpox

Food- or Water-borne

Amebiasis
 Botulism
 Campylobacter
 Cholera
 Cryptosporidiosis
 Cyclospora
 E. coli O154:H7
 Filariasis
 Giardiasis
 Hepatitis A & E
 Leptospirosis
 Listeria
 Salmonellosis
 Schistosomiasis
 Shigellosis
 Trichinosis
 Trypanosomiasis
 Typhoid fever
 Typhus

Vaccine-Preventable

Smallpox
 Varicella
 Tetanus
 Rabies
 Polio
 Measles
 Mumps
 Rubella
 Hepatitis A
 Hepatitis B
 Anthrax
 Diphtheria
 H. influenza
 Pertussis
 Influenza
 Typhoid fever
 Yellow fever

Vector-borne

Malaria
 Yellow fever
 Encephalitis
 Ehrlichiosis
 Lyme disease
 Rocky Mountain Spotted fever
 Rift Valley fever
 Leishmaniasis
 Dengue fever
 Hantavirus
 Hemorrhagic fever

**HIV reporting is accomplished through an alternative system*

Surveillance as a Tool for Detecting Bioterrorism

Since the events of last fall, medical surveillance has taken on new importance. After all, how can you tell if the recent increase in 'flu-like' illness is simply the typical spring occurrence of upper respiratory disease or early anthrax? How do you detect bioterrorism events early enough for effective interventions?

One key, then, is understanding the baseline rates of commonly occurring diseases and symptom syndromes. Unnatural events, or differing trends, then, can suggest the need for investigation.

Surveillance in 18th MEDCOM

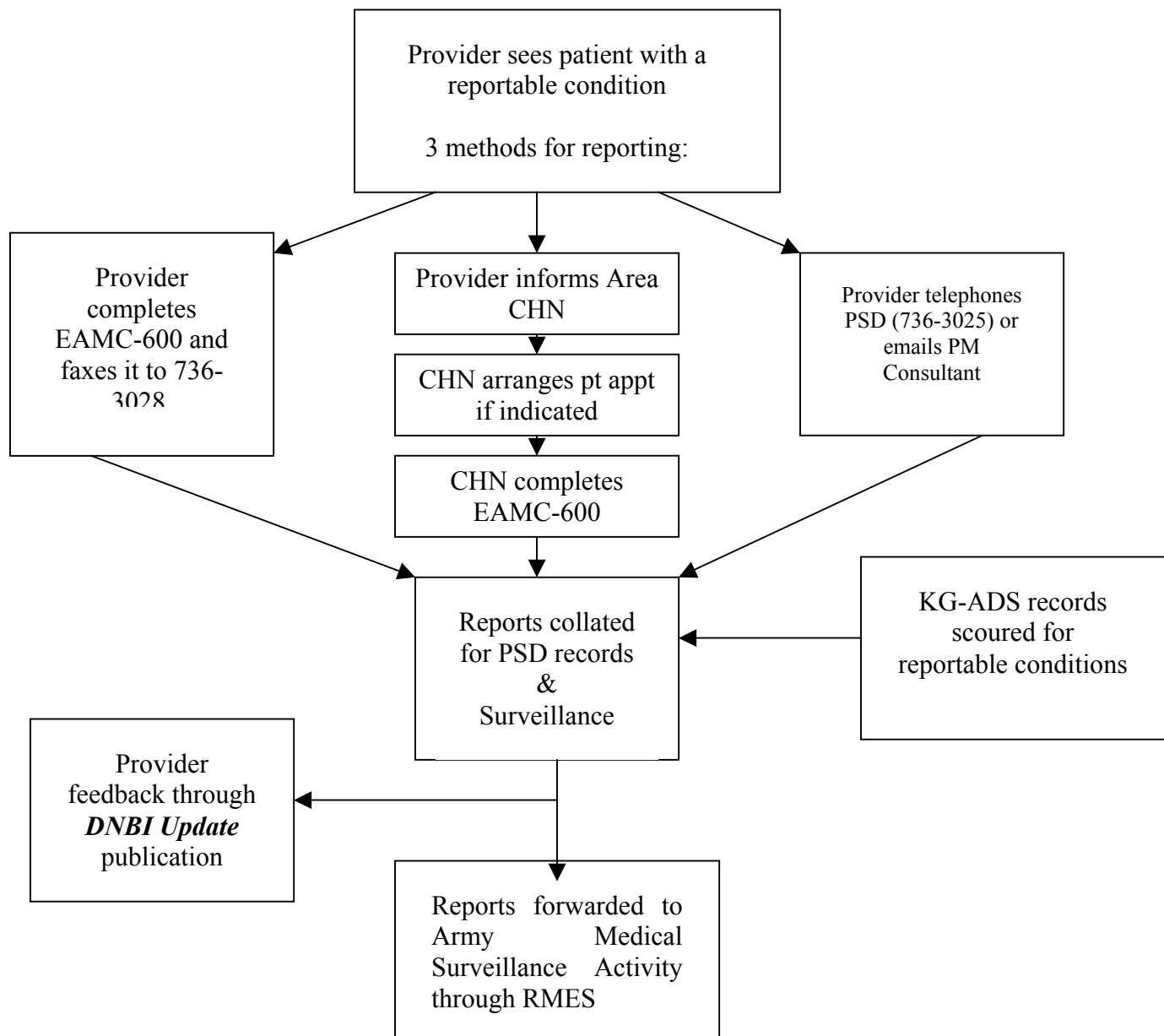
An understanding of baseline disease trends comes from the ever-unpopular KG-ADS forms. Diagnostic information is compiled and grouped into the DNBI categories. Knowledge of population

numbers and clinic visits enables the calculations of disease rates, which can be compared on a weekly, monthly or yearly basis. Hence, timely and accurate completion of KG-ADS documentation plays a critical role in our understanding of disease and injury trends.

Disease Reporting in 18th MEDCOM

Another critical element is the specific reporting of the diseases specified above. Despite the use of KG-ADS for recording diagnoses, a separate reporting system for these specific diseases is necessary due to the lag time between provider completion of the ADS form and the availability of KG-ADS data. This lag time impedes the initiation of effective public health interventions. For instance, sexually transmitted diseases, easily the most commonly occurring reportable diseases, require community health nurse interviews for case contact notification. This process enables contacts to receive evaluation and treatment, and thus contributes to breaking the chain of infection. Clearly, delays in case finding only delay the contact notification efforts, and prolong the spread of disease.

Below is a diagram of the disease reporting process:



Latex Allergy: The New Occupational Injury

As the use of latex in a variety of settings has increased, so has the prevalence of latex allergy.^{9, 10} In the last 15 years, the use of latex rubber as barrier protection during sexual intercourse has increased significantly due to fears of acquiring HIV, hepatitis B, and other bloodborne diseases.^{1,9,10} Additionally, latex is used in many other consumer products, including medical and dental supplies. Surgical gloves, urinary catheters, medication vial stoppers and dental dams are just a few of the many products that contain latex.

Latex comes from the milky liquid found in the tropical rubber tree, *Hevea brasiliensis*. The proteins found in latex can cause an allergic reaction in some people. However, the specific component responsible for sensitizing individuals is not yet known. Consequently, acceptable levels of protein residue exposure have not been determined. Reactions to latex range from mild skin irritation to life-threatening anaphylaxis. Since 1988, at least 15 people have died and hundreds of severe allergic reactions have been reported to the Food and Drug Administration (FDA).^{1,3}

Although hardened rubber products, such as tires, athletic shoes and rubber balls have the potential to cause allergic reactions in those people who are most sensitive, the vast majority of people with latex allergies are allergic to the type of latex used to make products that stretch - like rubber bands, rubber gloves, balloons, and condoms.¹²

It is estimated that as many as 1% to 6% of the general population is sensitized to latex.^{3,9,10} However, there are certain population groups who are at an increased risk for developing latex allergies. These groups include those with spina bifida (prevalence ranges from 10% to 65%)² and those who have had multiples surgeries or mucous membrane exposure, especially early in life (as in congenital urogenital abnormalities).^{9,10} Occupational latex exposures are found in health care workers and people who work in the rubber manufacturing industry. Approximately 6% to 17% of exposed health care workers, such as doctors, nurses, and lab technicians, are allergic to latex.^{3,9} Allergic symptoms related to latex use were reported by 13.7% of active duty U.S. Army dental officers.⁹ These estimates are based on seroprevalence, skin test positivity and/or allergic manifestations, not anaphylactic response.⁹

Due to similarities in latex proteins and some food proteins, cross-reactions may occur with some foods in latex-sensitive individuals. Some of the most common foods include: avocados, bananas, nectarines, passion fruit, kiwis, tomatoes, potatoes, celery and chestnuts.^{3,9,10} Even some elastics used in clothing may contain latex.

There are three types of latex reaction. The most common reaction is **irritant contact dermatitis**, which develops through repeated or prolonged skin exposure to latex, most commonly from wearing latex gloves. The skin usually becomes red, dry, and cracked. This reaction is not felt to represent a true allergy, but instead is due to chronic irritation from the skin sweating or rubbing under the gloves. The best way to relieve or prevent irritant contact dermatitis is to apply non-petroleum based creams and lotions or wearing cotton glove liners.

Allergic contact dermatitis, also known as Type IV delayed hypersensitivity or allergic contact sensitivity, is a reaction to chemicals that are added to latex during processing. A skin rash usually occurs one to two days after contact and may include itching and blistering, with crusting and oozing lesions, resembling poison ivy. Washing the skin after contact with latex may help prevent allergic contact dermatitis. Skin patch tests can help identify the particular chemicals used in the latex manufacturing process which may cause a person's allergy. Using cotton glove liners or a different brand of gloves may relieve the symptoms.

The third type of reaction is the **Natural Rubber Latex (NRL) allergy**. This reaction results from the body's immune system reacting to the proteins in the rubber. The allergic reaction may include itchy, red or watery eyes, sneezing and wheezing. More severe reactions may be swelling of the throat, tongue or nose, tightness of the chest, difficulty breathing, shock, loss of consciousness and death. The most danger occurs when latex comes into contact with the body's mucosal areas - mouth, vagina, or

rectum - allowing the body to rapidly absorb more of the allergen. Latex proteins may stick to the powder used on latex gloves and can actually become airborne when the gloves are removed. The powder can be inhaled or come into contact with the eyes, also leading to severe allergic reactions.

There is no cure for latex allergy. The best control for symptoms is to avoid latex or, as the Occupational Safety and Health Administration's (OSHA) Bloodborne Pathogens Standard mandates, wash hands after glove removal. There are many nonlatex items on the market that can be used in place of latex ones. The National Institute of Occupational Safety and Health (NIOSH) recommends that nonlatex gloves be used for all activities that are not likely to involve contact with infectious materials,⁹ such as food preparation, gardening, and routine housekeeping. Synthetic gloves, approved by the FDA and suitable for healthcare workers who come in contact with infectious materials, are also available. Although vinyl gloves are generally considered less protective than latex, some newly developed alternatives—such as nitrile, neoprene, and styrene—may offer barrier properties comparable or superior to latex.¹³ When using latex gloves cannot be avoided, powder-free, low-protein gloves are preferable. The use of powder-free gloves reduces the amount of latex rubber proteins in the environment, thereby decreasing exposure by the inhalation and dermal routes.^{9,10} Immediate hand washing helps minimize powder and latex protein particles that remain on the skin.⁹

Since latex allergies are on the rise, it is vital for each of us to have first hand knowledge about the potential dangers of latex. All of us should know which products contain latex and be able to recognize the symptoms of latex allergy, and how to treat adverse reactions to latex. Armed with this knowledge we can minimize the harmful effects of latex and protect ourselves and our patients.

--contributed by MAJ Mary Christal

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14. For more information on latex gloves and sensitization, go to: <http://www.smtl.co.uk/MDRC/Gloves/jowcpaper96/jowc-glove-paper.html>. The parent page also contains good references for wound care supplies and other related information.

Latex Allergy

Latex allergies have been increasing in occurrence over the last 10 to 14 years as the use of latex products has increased.

Latex allergy poses a risk for 8 to 17% of Health care workers and approximately 3% of the general public.

What is latex?

Natural rubber latex comes from a liquid in tropical rubber trees. Some items that may contain latex are:

- Balloons, rubber toys, rubber bands
- Pacifiers and baby-bottle nipples
- Adhesive tape and bandages
- Diapers and sanitary pads
- Condoms, dental dams
- Hospital gloves, urinary catheters
- Materials used to fill root canals
- Tourniquets and equipment for resuscitation.

What is latex allergy?

The protein in rubber can cause an allergic reaction in some people. The thin, stretchy rubber in gloves, condoms and balloons is high in this protein. It causes more allergic reactions than products made of hard rubber (like tires). Also, because some rubber gloves are coated with cornstarch powder, the rubber protein particles stick to the cornstarch and fly into the air when the gloves are taken off. In places where gloves are being put on and removed frequently, the air may contain many latex particles.

Latex allergy can be mild, with symptoms such as itchy, red, watery eyes, sneezing or runny nose, coughing, rash or hives. It can

also be very severe, with symptoms like chest tightness, shortness of breath and shock. It may even cause death. A latex-sensitive person can have a life-threatening allergic reaction with no previous warning or symptoms.

Is there a connection between latex allergy and foods?

Because some proteins in rubber are similar to some food proteins, some foods may cause an allergic reaction in people who are allergic to latex. The most common of these foods are banana, avocado, chestnut, kiwi fruit and tomato. Although many other foods can cause an allergic reaction, avoiding all of them might cause nutrition problems. Therefore, it's recommended that you avoid only the foods that have already given you an allergic reaction.

What should I do if I find out I have a latex allergy?

If you think you have a latex allergy, see a doctor. The doctor will take a detailed history and may confirm the diagnosis with a blood test. Skin testing is done in some specialized centers. It's not used everywhere, because it can cause severe reactions if it isn't done by an experienced person.

Although there is no treatment for latex allergy, you can reduce your risk of reaction by avoiding direct contact with latex. Take steps to find out which products in your environment contain latex and the substitutes you can use for those products. It's also important to avoid breathing in latex particles from powdered gloves.

If you are a health care worker or a patient, everyone around you should wear powder-free latex gloves or non-latex gloves. If you are a health care worker, compare different kinds of non-latex gloves to find the ones that are the best for you.

Always wear a Medic-Alert bracelet or necklace. Talk to your doctor about getting a prescription for an epinephrine self-injection pen, to use in case of a serious reaction. You may wish to carry non-latex gloves with you all the time for use by emergency personnel if you need medical attention.

If you are exposed to latex at your job, tell your employer and co-workers about your latex allergy. Avoid latex gloves completely if you're not at risk for blood and body fluid contamination. Use powder-free gloves if latex gloves are preferable. These measures will help keep others from becoming allergic to latex.

Where can I get more information about latex allergy?

Latex Allergy News: The Information Sharing Vehicle of ELASTIC (Education for Latex Allergy Support Team and Information Coalition) Telephone: 860-482-6869

Spina Bifid Association of America (Can supply updated list of latex products and substitutes) Telephone: 800-621-3141

Call Community Health Nursing/Health Promotion Program, 18th Medical Command DSN 736-6693

Go to the American Academy of Family Practice website at www.familydoctor.org



DISEASE TRENDS

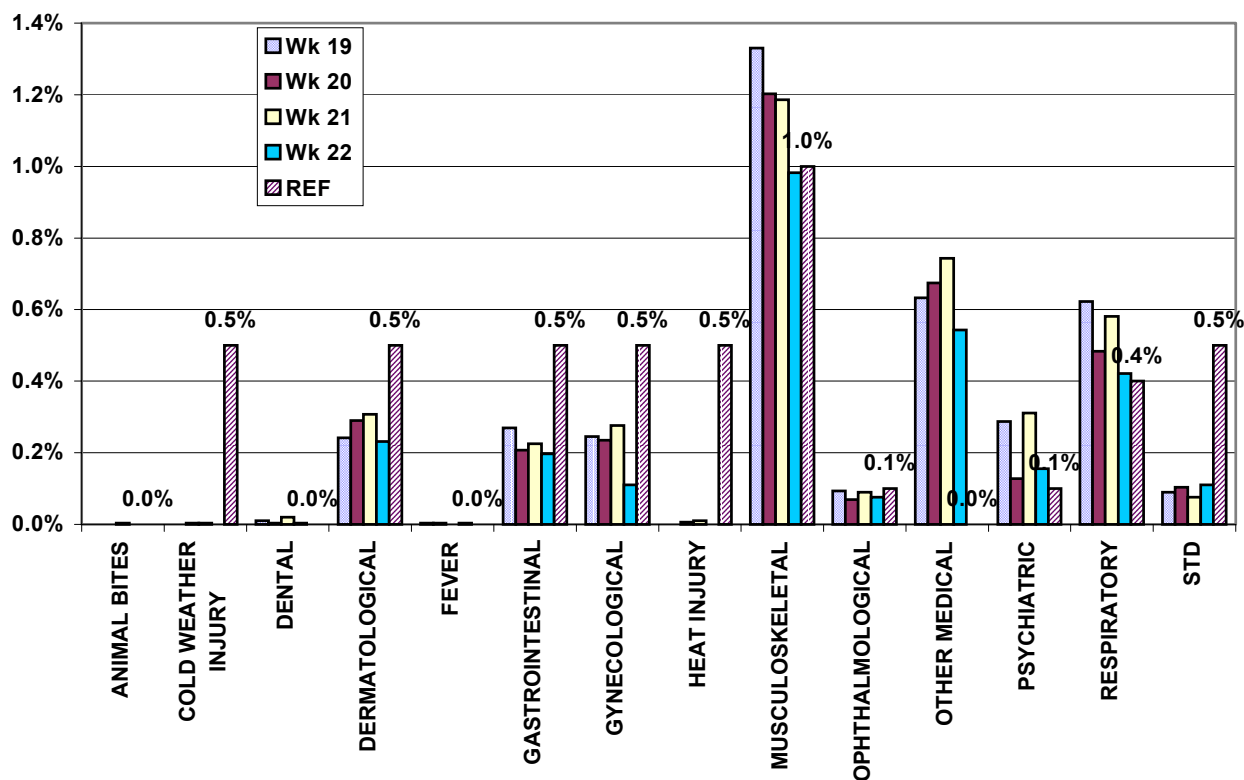
18th MEDCOM Reportable Events Program

Selected Reportable Events Incidence Summary MAY 2002

Reportable Condition	Area I	Area II	Area III	Area IV	Totals
Trichomonas	0	1	0	0	1
Chlamydia	29	25	11	7	72
Herpes simplex	0	1	0	0	1
Gonorrhea	8	3	4	3	18
Syphilis	0	0	0	0	0
HIV	0	1	0	0	1
STD Totals	37	31	15	10	93
Tuberculosis (active disease)	0	0	0	0	0
Tuberculosis (recent converter)	12	7	3	0	22
Animal Bites	0	0	0	0	0
Cold Weather Injuries	NR	NR	NR	NR	NR
Heat Injury	NR	NR	NR	1	NR
Deaths from all causes	0	0	0	0	0

NR=None Reported

Distribution of Disease Non-Battle Injury Medical Visits for Active Duty US Army Members Seen in 18th MEDCOM Clinics



Editor's Note: Data for above chart was generated through a manual review of KG-ADS diagnoses given each active duty US Army patient seen in 18th MEDCOM primary care, urgent care, and women's health clinics. Percentages are calculated based on total Army strength. Only one visit for the same disease or injury category was counted. Only KG-ADS data completed within a week or less of the patient visit was accessible. While DNBI tracking traditionally differentiates recreational injuries from training injuries and MVA injuries, the lack of information pertaining to cause of injury in KG-ADS makes this impossible to determine.

Reference rates are taken from the DNBI Reporting Form for Joint Deployments. While the illness rates appear to be well below those suggested by JCS doctrine, this most likely is a reflection of incomplete ADS reporting.

Comment: Rates for disease non-battle injuries were below the suggested reference rates for all categories except musculoskeletal injuries, psychiatric visits and respiratory disease. This may simply reflect seasonal variations in sports activity and allergic symptoms.

Reported Events Summary, USFK: May 2002

	Conditions	May 2002	Cum 2002	Cum 2001
STD	Chlamydia	72	214	45
	Gonorrhea	18	69	26
	Herpes Type II	1	3	2
	HIV/AIDS	1	2	
	Trichomonas	1	8	
	Syphilis	0	1	1
Infectious Diseases	Campylobacter	0	1	
	Cholera	0	0	
	E.Coli 0157:H7	0	0	
	Encephalitis	0	0	
	Giardiasis	0	0	
	Hepatitis A	0	0	
	Hepatitis B	2	3	
	Hepatitis C	0	0	
	Influenza	0	0	
	Measles	0	0	
	Meningoccal Meningitis	0	0	1
	Pneumococcal Pneumonia	0	0	
	TB, Active	0	4	2
	PPD Conversion	22	91	19
	Salmonellosis	1	3	3
	Shigellosis	0	0	
	Typhoid Fever	0	0	
	Varicella, adult	0	1	2
Vector-borne Diseases	Dengue Fever	0	0	
	Ehrlichiosis	0	0	
	HFRS	0	0	
	Japanese Encephalitis	0	0	
	Leptospirosis	0	0	
	Malaria	1	3*	12^
	Rabies	0	0	
	Scrub Typhus	0	0	
Injuries	Animal Bites	0	8	17
	Cold Injury	0	3	
	Heat Injury	1	1	5
	CO Poisoning	0	0	
	Lead poisoning	0	0	
	Hearing Loss	0	0	
Immunization	VAERS	0	0	
	Influenza	0	0	

Notes:

*One case represents disease contracted outside the ROK

^Indicates cases diagnosed while in the ROK; additional 17 cases were diagnosed after return to US

Please refer to the reverse of the 18th MEDCOM IHO Reportable Events Worksheet for a complete listing of reportable events. A copy of this form is included at the end of this document.